



Joshua Lederberg

'Good Food' to One Human May Half-Starve Another

EVERYONE KNOWS that human well-being depends on good food. Just what good food consists of is a subtle question, however, and becomes more so the closer we look at it from a scientific point of view.

Nutritional science has, of course, gone a long way in spite of its place as the homeliest aspect of biochemistry. We know that man is very close to the rat and the pig in his dietary needs; therefore, many more sophisticated studies can be done in the laboratory than would be possible by clinical experimentation.

The diet can be classified roughly into four categories of nutrients: calories, amino acids for building body proteins, vitamins needed in trace amounts and minerals like iron, calcium or iodine which play special roles in body metabolism.

Calories are simply fuel, and can be furnished interchangeably from many different nutrients, usually starches, fats or protein by-products. The first problem of human nutrients is, simply, to distribute enough calories, but the disease this remedies is sheer starvation, not the malnutrition that may hobble a third or more of the world's population. The more closely we look at our urban populations, the less complacent we can be about malnutrition in our citizenry.

AS OPPOSED to starvation, malnutrition refers to a deficit or imbalance among another two dozen specific nutrients, various amino acids, vitamins and minerals. These are not interchangeable at all; a diet superb in every other respect but deficient in thiamin is just as lethal as if it were loaded with arsenic, and it will do no good at all to add more riboflavin or lysine to it.

To evaluate specific human needs for each of these many substances is obviously an intricate task, and has attracted an enormous amount of scientific effort. The official answers are labeled "Recommended Dietary Allowances," and the footnotes caution that these

include a rule of thumb average intended to cover incomplete knowledge and some range of special personal circumstances. Even so, the allowances are intended to cover the needs of healthy "reference" adults and we have little more than guesswork about the special quantities needed by young children or pregnant or nursing mothers.

One important difficulty is to define the purpose of a diet. The recommended allowances are based on the nutrients needed to maintain an adult in good health over short periods of close observation. Thus it is still controversial whether histidine is a required amino acid. Adults can dispense with it during experimental periods, but possibly by virtue of rather large reserves stored in muscle. We can also define the nutrients needed to maintain rapid growth in body weight of infants, but this is almost certainly a poor criterion for over-all development.

IS THERE a specific nutrient we might regard as a "brain food"? There is no scientific support for the folklore on the subject (except for special cases like fish as a source of iodine in goiter country), but present-day science can say almost nothing about special needs of children for the optimum growth and effectiveness of their brains. Many adults believe that caffeine is a brain stimulant; we know little enough about the truth of that, and less still what it would do for, or against, children.

Another unexplored territory is the range of individual variation in nutritional needs. Some sharp biochemical differences could be dragged into this discussion, but they are usually regarded as rare diseases. Recent discoveries that most nonwhite adults (Negroes and Orientals) do not digest milk sugar, however, should wither any complacency we might have about the most elementary possibilities of individual or racial differences in nutrition. It should be obvious how urgent is further research along these lines in order to restore equal opportunity to racial minorities which are under

irresistible pressure to conform to white standards of nutrition.

Answering these questions demands an unremitting concentration of scientific and social-minded learning from many fields. Congress has been greatly exercised lately about the disruption of learning by student demonstrations, and, of course, I am, too. But its current bloodletting in the budgets for science and education is a quiet violence to national needs that far exceeds what any radical student sit-in could dream of accomplishing toward destroying the universities.

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